Goals, Benefits and Performance: Using Conceptual Models in Assessing Restoration Outcomes

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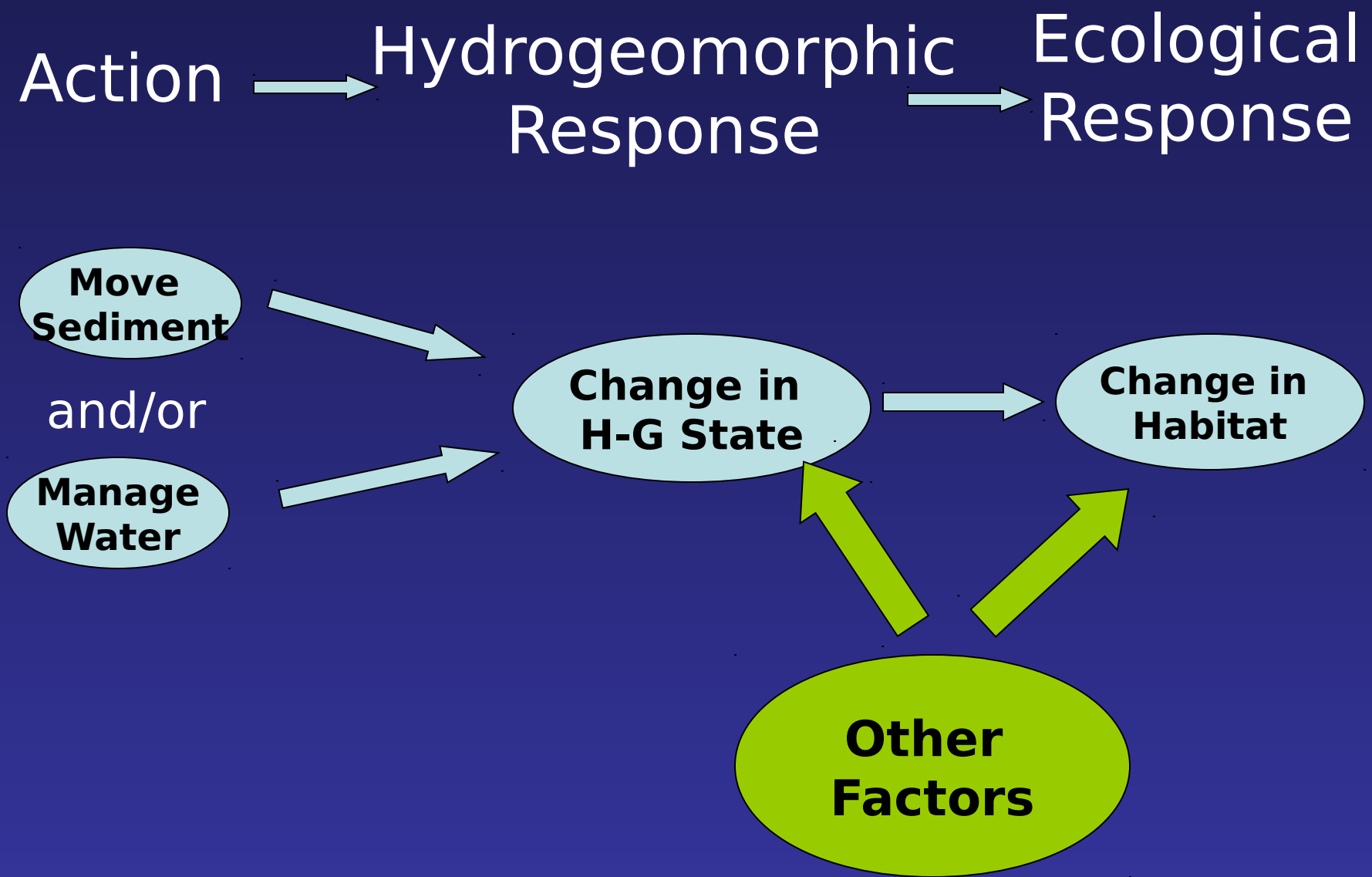
Context

Ecosystem restoration outputs *must be clearly identified and quantified in appropriate units. Although it is possible to evaluate various physical, chemical, and/or biological parameters that can be modified by management measures which would result in an increase in ecosystem quantity and quality in the project area, the use of units that measure an* ***increase in "ecosystem" value and productivity*** *are preferred. Some examples of possible metrics which may be used include habitat units, acres of increased spawning habitat for anadromous fish, stream miles restored to provide fish habitat, increases in number of breeding birds, increases in target species and diversity indices.*

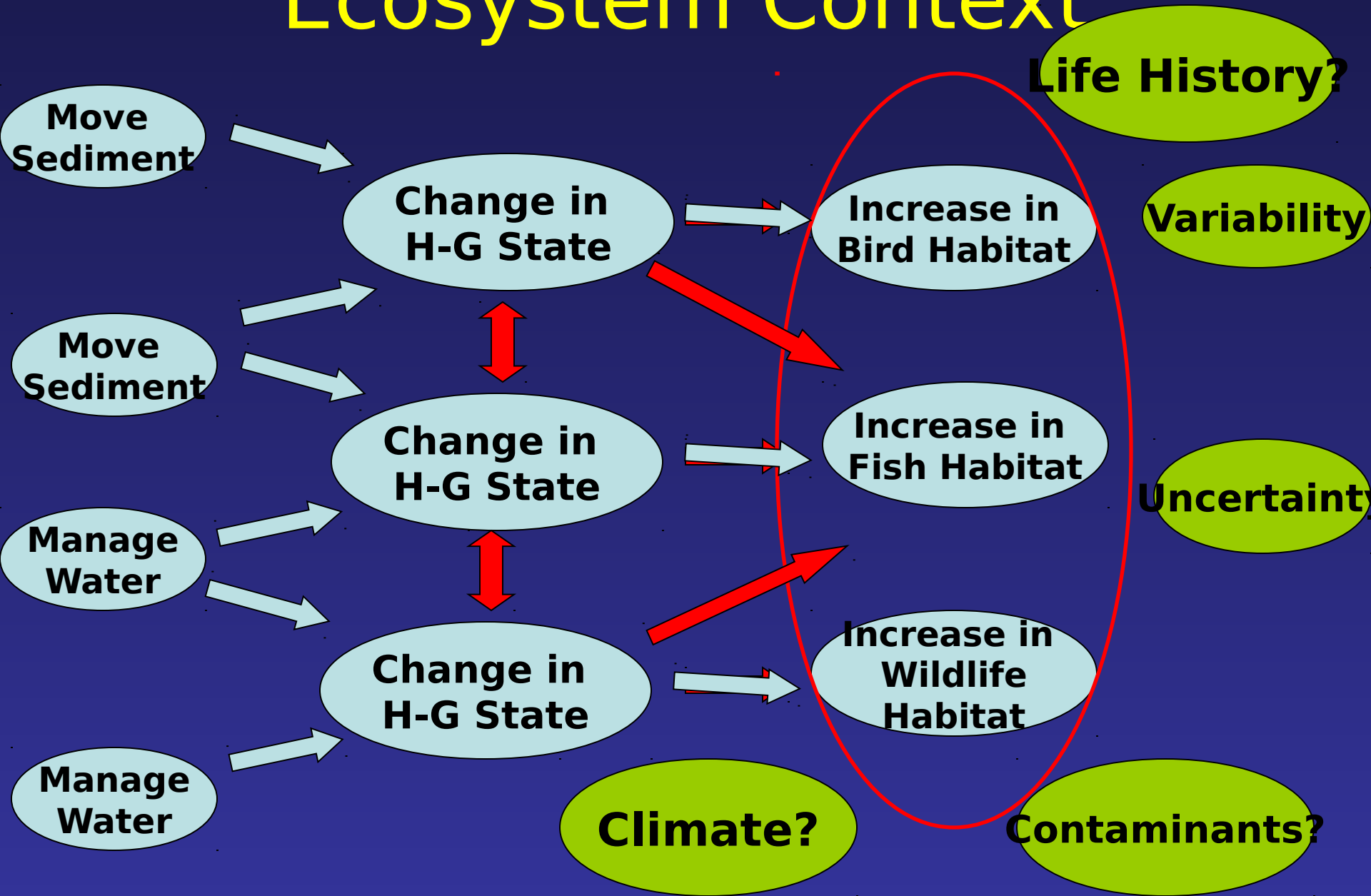
The Problem

- Local sponsors and Congress have ***Goals***
- USACE undertakes ***Actions***
- ***Outcomes*** need to be predicted during planning
- ***Monitoring*** is needed but funds are limited
- We want to do ***Adaptive Management***
- ***Performance*** needs to be assessed by bureaucrats

Basic Conceptual Model



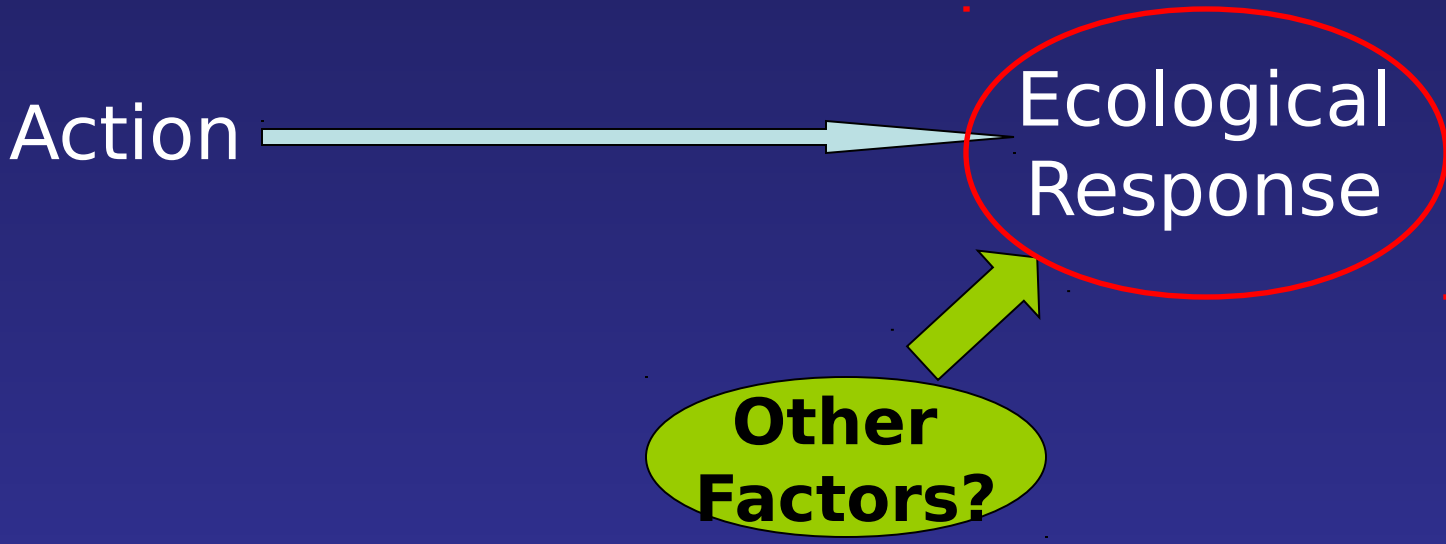
Ecosystem Context



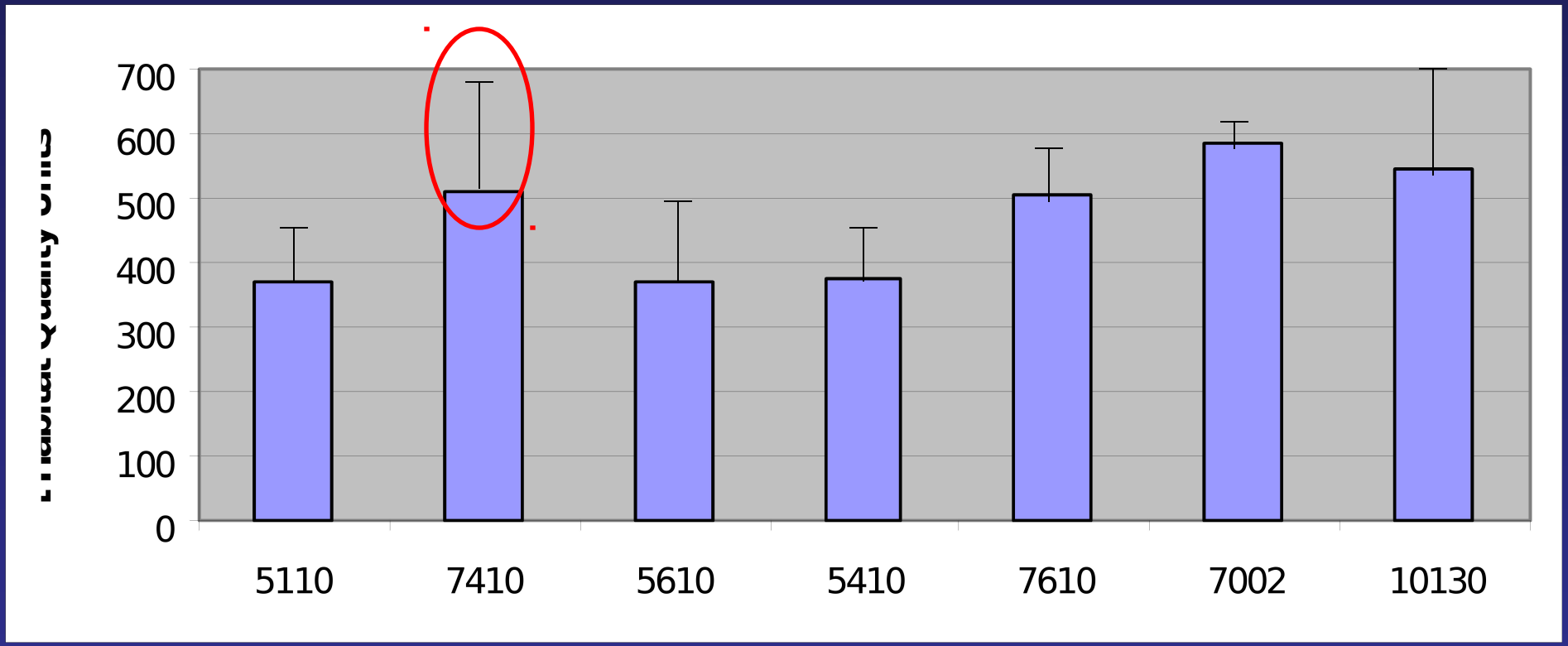
Planning Phase – NER ‘Benefits’

Basic Conceptual Model

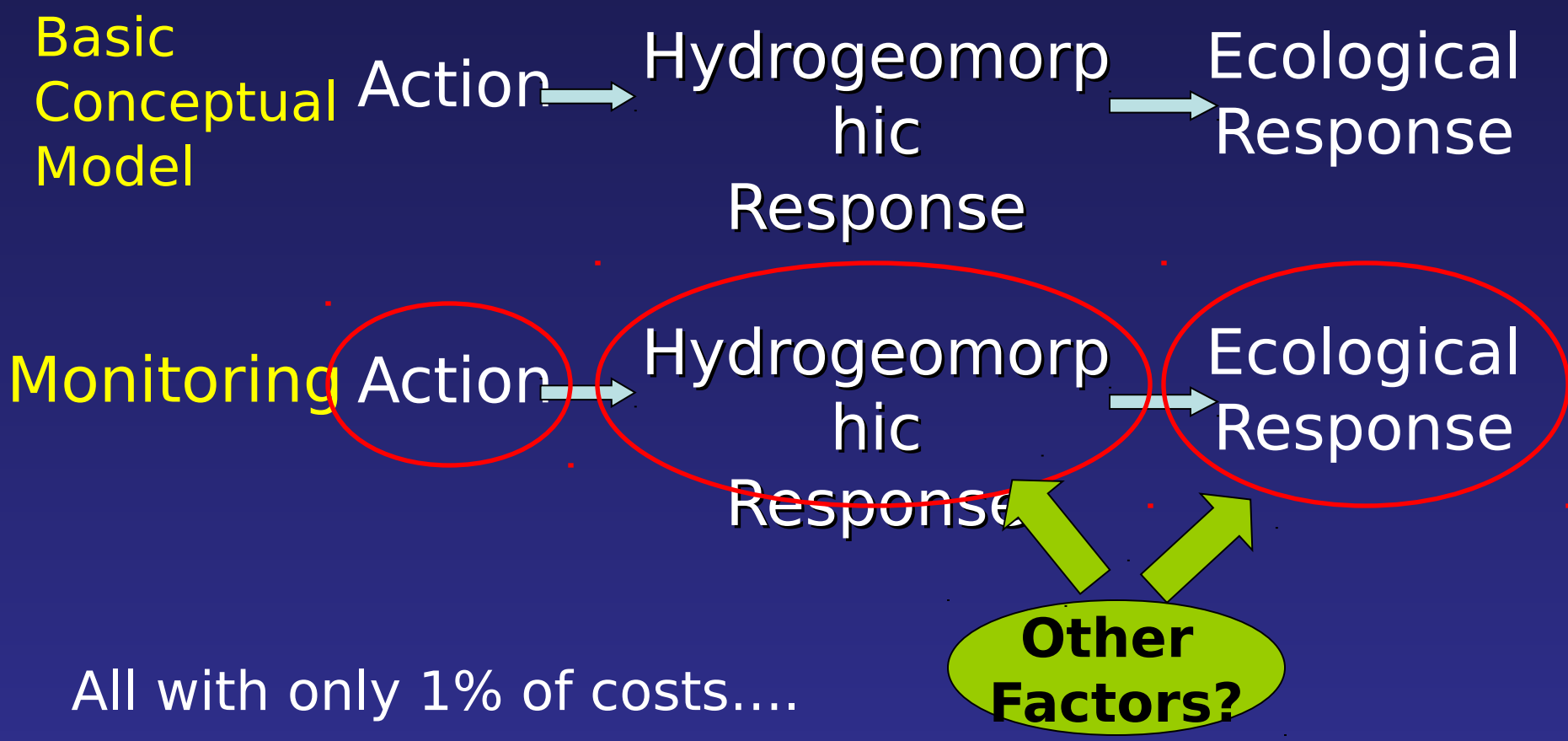
Planning Benefits



Actions Lead to Benefits



Monitoring Phase – Outcomes



All with only 1% of costs….

Adaptive Management Phase

Basic Conceptual Model

Action → Hydrogeomorphic Response → Ecological Response

Adaptive Management

Action → Hydrogeomorphic Response → Ecological Response

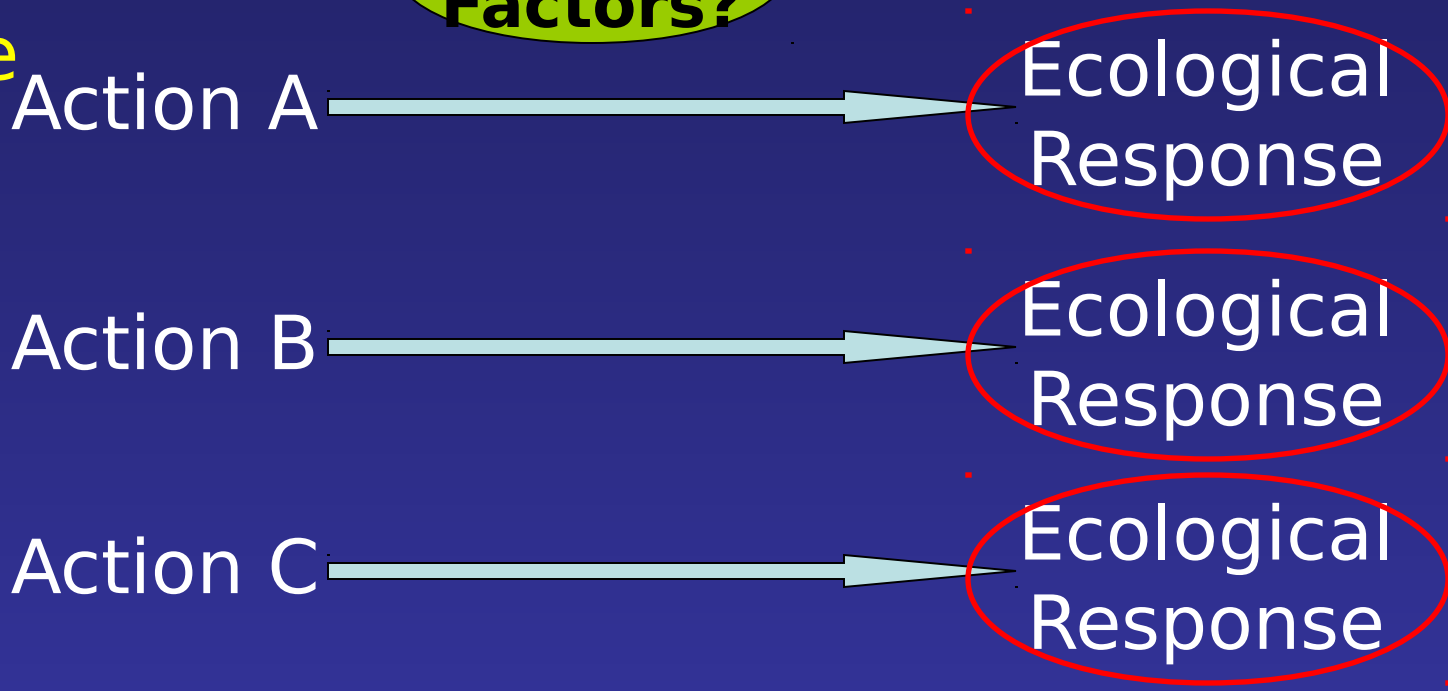
Other Factors?

All with only 3% of costs….

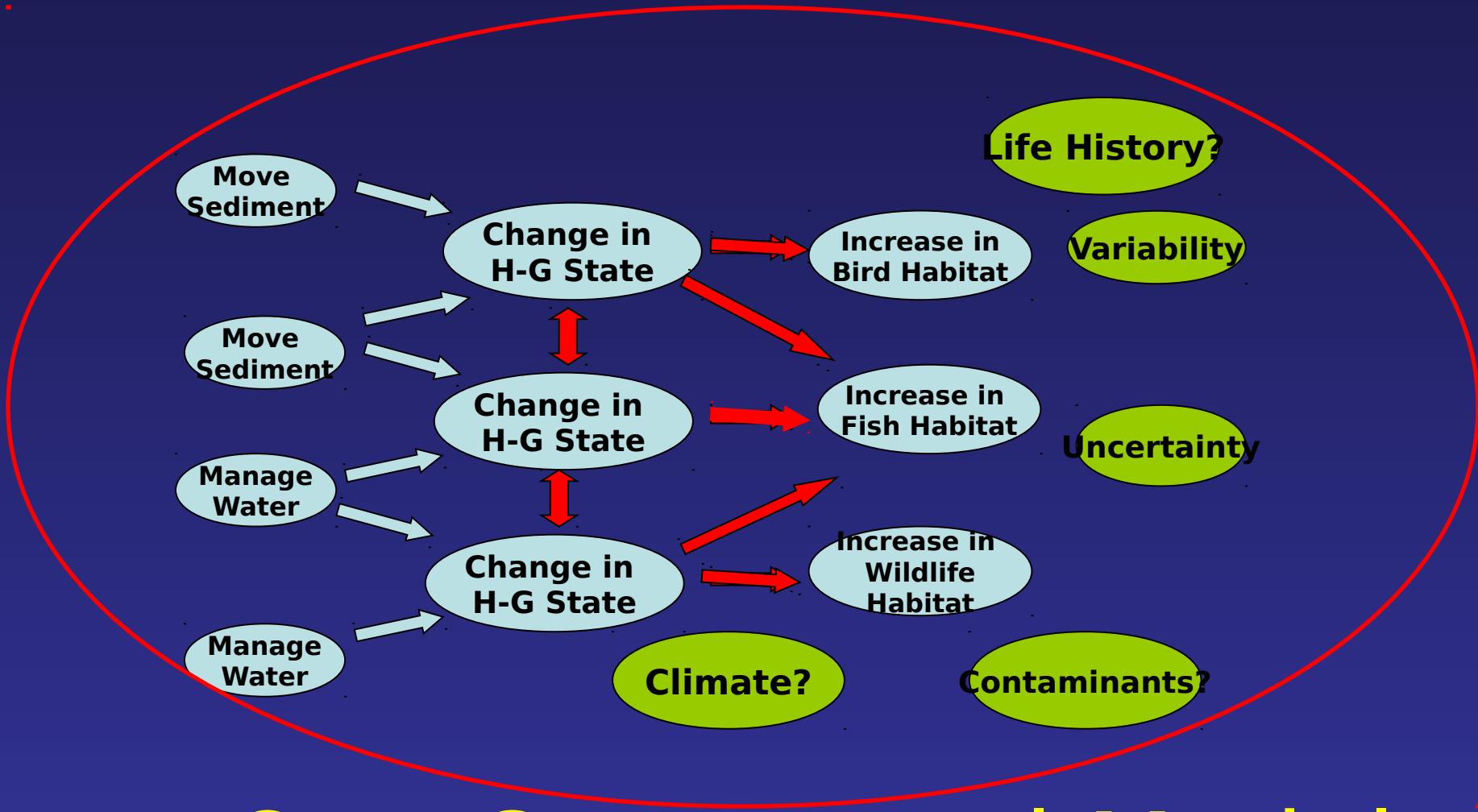
Program Performance

Basic Conceptual Model

Performance Assessment



Goals, Action, Outcomes, Performance Adaptive Management



One Conceptual Model